NATURAL SCIENCES GRADE 9 TERM 2 Tracker

Week 1													
		Yea	ar:				Year:						
	CAPS		(Class	5			;					
CAPS Concepts and Activities	Page												
	no.	D	ate (Com	olete	ed	D	ate (Comi	olete	ed		
Week 1 Lesson A													
Topic: Compounds	63												
 Briefly review and revise concepts dealt 													
with in Grade 8, focusing on compounds													
Week 1 Lesson B	63												
Topic: Compounds	63												
The elements can be classified into													
 The elements can be classified into metals, non-metals and semi metals 													
 The elements found in groups (vertical 													
columns) have similar chemical													
properties													
• Each element on the periodic table (in its													
own block) has an atomic number (smaller number) mass number (larger													
number), name and symbol													
Week 1 Lesser C													
Tanic: Compounds	63												
Content & Concents: The Periodic Table	05												
A formula/e is ratio of the symbols of the													
elements and number of atoms for each													
symbol in a compound													
Content & Concepts: Names of													
Many compounds are named according													
to their elements, such as sodium													
chloride (table salt) which is made of the													
elements sodium and chlorine. But													
others have common names such as													
water and ammonia													
 some compounds have names such as carbon monoxide CO, carbon dioxide 													
CO ₂ , sulphur trioxide SO ₃ . In these													
compounds:													
• mono xide – tells us that one													
oxygen atom has combined with													
\circ dio xide – tells us that two													
oxygen atoms have combined													
with the carbon atom													
 trioxide – tells us that two 													
oxygen atoms have combined													
with the carbon atom													

Reflection		
Year:		
Think about and make a note of: What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you cover all the work set for the week? If not, how will you get back on track?	What will you change next time	? Why?
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	Week 2										
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CADE Concents and Activities	CAPS	Class						5			
CAPS Concepts and Activities	Page										
	no.	D	ate (Com	plete	ed	D	ate (Com	plete	ed
Week 2 Lesson A											
Topic: Chemical reactions	64										
Content & Concept: Chemical equations											
to represent reactions											
Chemical reactions can be represented											
with models											
Chemical reactions are usually											
chemical equations: For Example:											
$\circ C + O_2 \rightarrow CO_2$											
$\circ 2H_2 + O_2 \implies 2H_2 O$											
• The subscript number indicates the											
number of atoms of an element found in											
the formula											
 The numbers in front of the compounds indicate the ratio in which the melocules 											
react. For example two molecules of											
hydrogen react with one molecule od											
oxygen to form water, therefore the ratio											
is 2:1 (H:O)											
No atoms are lost or gained in the											
Neok 2 Losson P											
Tonic: Chemical reactions	64										
Content & Concept: Balanced Equations	04										
Chemical equations must be written as											
balanced chemical equations. The total											
number and type of atoms of the											
reactants is the same as in the products											
Week 2 Lesson C											
Topic: Chemical reactions	64										
Content & Concept: Balanced Equations											
Chemical equations must be written as a halanced chemical equation. The total											
number and type of atoms of the											
reactions is the same as in the products.											
The above equations are therefore											
balanced in the following way:											
• 4Fe + $3O_2 \rightarrow 2Fe_2O_3$ (brown											
rusty coating) $2Mg + \Omega_2 \rightarrow 2Mg \Omega$ (white											
powder)											
Another example is copper reacting with											
oxygen to form copper oxide. This is a											
very slow reaction											
• word equation:											
copper + oxygen → copper											
chemical equation:											
$2(1+0) \rightarrow 2(10)$											

Reflection		
Year:		
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Week 3												
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CAPS Concepts and Activities	Page											
	no.	D	ate (Com	plete	ed	D	ate (Com	plete	ed	
Week 3 Lesson A												
 Topic: Reactions of metals with oxygen Content & Concepts: The general reaction of metals with oxygen Some metals react with oxygen during burning (combustion) When a metal reacts with oxygen, a metal oxide is formed as a product. The general equation for this type of reaction is always: metal + oxygen → metal oxide 	65											
Week 3 Lesson B												
 Topic: Reactions of metals with oxygen Content & Concepts: Reactions of iron with oxygen When the metal iron is burnt in air (which contains oxygen), the reaction forms iron oxide as a product Word equation: iron + oxygen iron oxide Chemical equation: Fe + O2 → Fe2O3 [unbalanced] 	65											
Week 3 Lesson C												
 Topic: Reactions of metals with oxygen Content & Concepts: Reactions of magnesium with oxygen When the metal magnesium is burnt in air (which contains oxygen), the reaction forms magnesium oxide as a product Word equation: magnesium + oxygen → magnesium oxide Chemical equation: Mg + O₂ → MgO [unbalanced] 	65											

Reflection		
Year:		
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	Week 4												
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CAPS concepts and Activities	Page												
	no.	D	ate (Com	plete	ed	Da	ate (Com	olete	ed		
Week 4 Lesson A													
Topic: Reactions of metals with oxygen	66												
 Content & Concepts: Formation of rust Rusting is a slow chemical reaction of iron metal, with oxygen and moisture (water) to form a complex compound part of which is iron oxide Rust (a form of corrosion) only occurs at the surface of the iron exposed to the air Steel (which consists mostly of iron) is an essential material in modern construction. Equipment and structures can rust, and weaken Content & Concepts: Ways to prevent 													
 rust Iron and steel can be painted to keep away moisture and oxygen Iron and steel can be coated with a thin layer of chromium or zinc (metals which do not rust) This is done by an electroplating technique which is a form of electrolysis 													
Week 4 Lesson B													
 Topic: Reactions of non-metals with oxygen Content & Concepts: The general reaction of non-metals with oxygen Non-metals react with oxygen to form non-metal oxides When any non-metal is burnt in excess oxygen, the general equation is always non-metal + oxygen → non-metal oxide Week 4 Lesson C 	66												
Topic: Reactions of non-metals with	66												
 oxygen Content & Concepts: Reaction of carbon with oxygen When the non-metal carbon is burnt in oxygen, carbon dioxide is produced Word equation: carbon + oxygen → carbon dioxide Chemical equation: C + O₂ → CO₂ (this equation is already balanced) 													

Reflection		
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	Week 5												
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	110.	D	ate (Com	plete	ed	D	ate (Com	plete	ed		
Week 5 Lesson A													
Topic: Reactions of non-metals with	66												
oxygen													
Content & Concepts: Reaction of sulphur													
• Another example is sulphur reacting with													
• Another example is supplied reacting with oxygen to form supplier dioxide:													
 Word equation: sulphur + oxygen 													
ightarrow sulphur dioxide													
 Chemical equation: 													
$S + O_2 \rightarrow SO_2$													
(this equation is aready balanced)													
Topic: Acids and bases and pH value	67												
Content & Concents: The concent of nH	07												
value													
 pH is a measure of how acidic or basic a 													
substance is. The pH scale ranges from 1													
to 14													
• Acids have a pH in the range of 1 to 7													
Strong acids have very low pH values													
 Bases have a print the range of 7 to 14. Strong bases have very high nH values 													
 A neutral substance has a pH of 7 													
Week 5 Lesson C													
Topic: Acids and bases and pH value	67												
Content & Concepts: The concept of pH													
value													
We use chemical indicators (such as													
universal indicator, litmus paper, red													
cabbage water, red onion water,													
phenolphthalein) to tell us whether a													
substance is an acid, base or neutral													
	Reflectio	n											
Year:													
Think about and make a note of: What went well? W	hat did not	70	14	/hat w	vill vo	. char	000 00	vt tim	o2 \//	by2			
well? What did the learners find difficult or easy to u	nderstand o	br do?	vv	mat w	iii you		ige ne		C: VV	iiy:			
What will you do to support or extend learners? Did	you cover a	ll the											
work set for the week? If not, how will you get back	on track?												
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	Week 6	5									
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CAPS Concepts and Activities	Page										
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Week 6 Lesson A											
 Top Topic: Acids and bases and pH value Content & Concepts: The concept of pH value Universal indicator has the ability to indicate the full range of pH values on the pH scale by colour changes Acids change the colour of universal indicator towards the yellow, orange and red colours Bases change the colour of universal indicator towards the blue and purple colours Neutral substances (pH 7), change the colour of universal indicator to green 	67										
Week 6 Lesson B											
 Topic: Reactions of acids with bases: Part I Content & Concepts: Neutralisation of pH Acids and bases react together, we call this a neutralisation reaction An acid reacts with a base, to make it less basic / neutral Acids commonly used in the laboratory include sulphuric acid (H₂SO₄) and hydrochloric acid (HCl) After reacting an acid and a base together, the resultant pH will vary based on the strength of the acid and base reactants 	67										

Week 6 Lesson C											
Topic: Reactions of acids with bases:	67										
Part I											
Content & Concepts: Neutralisation of											
pH											
Non-metal oxides tend to be acidic (low											
 Bases (high nH) include metal oxides 											
metal hydroxides, metal carbonates											
• Acids and bases react together, we call											
this a neutralisation reaction											
A base reacts with an acid, to make it less acidic / neutral											
• An acid reacts with a base, to make it less basic / neutral											
 Acids commonly used in the laboratory include culphuric acid (H.SO.) and 											
hvdrochloric acid (HCl											
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Week 7													
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CAPS Concepts and Activities	Page												
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Week 7 Lesson A													
Topic: Reactions of acids with bases:	68												
Part II													
Content & Concepts: The general													
reaction of an acid with a metal oxide													
(base)													
When metals react with oxygen, they													
tend to form oxides which are bases (see													
reactions of metals with oxygen)													
the products formed are a salt and													
water. The type of salt formed will													
depend on the specific acid and metal													
oxide used in that reaction													
The general equation is always:													
acid + metal oxide \longrightarrow salt + water.													
Word equation: hydrochloric acid													
+ magnesium oxide \rightarrow													
magnesium chloride + water													
 Balanced chemical equation: 													
$2HCI + MgO \longrightarrow MgCI_2 + H_2O$													
Week 7 Lesson B													
Topic: Reactions of acids with bases:	68												
Part II													
Content & Concepts: Applications													
Burning wood and fossil fuels													
releases carbon dioxide and sulphur													
combine with water in the													
atmosphere to produce acid rain													
• Limestone (CaCO₃) is used in													
agriculture to make soil less acidic													

Week 7 Lesson C											
Topic: Reactions of acids with bases:	68										
Part II											
Content & Concepts: The general											
reaction of an acid with a metal											
hydroxide (base)											
• When metals react with water, they											
tend to form hydroxides which are											
bases											
 When any acid reacts with a metal 											
hydroxide, the products formed are											
a salt and water. The type of salt											
formed will depend on the specific											
acid and metal oxide used in that											
The general equation is always											
 The general equation is always: acid + motal bydravida - calt + 											
aciu + metal mydroxide / sait +											
• Word equation: hydrochloric											
\sim acid + sodium hydroxide \rightarrow											
sodium chloride + water											
 Balanced chemical equation: 											
HCl + NaOH \longrightarrow NaCl +											
H ₂ O											
[Note: sodium chloride (NaCl) is table											
salt]											
	Reflectio	on									
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Think about and make a note of: What went well? W	hat did not	go	W	/hat w	ill vou	ı chan	ige ne	xt tim	e? W	hv?	
well? What did the learners find difficult or easy to u	nderstand c	or do?			,		0			,	
What will you do to support or extend learners? Did	you cover a	ll the									
work set for the week? If not, how will you get back	on track?										
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Veen											
Year:											
Think about and make a note of: What went well? W	'hat did not	go	W	/hat w	vill you	ı chan	ige ne	xt tim	e? W	hy?	
well? What did the learners find difficult or easy to u	nderstand o	or do?									
What will you do to support or extend learners? Did	you cover a	ll the									
work set for the week? If not, how will you get back	on track?										
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Week 8												
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Week 8 Lesson A												
Topic: Reactions of acids with bases:	69											
Part III												
Content & Concepts: The general												
carbonate (base)												
Metal carbonates are bases												
When any acid reacts with a metal												
carbonate, the products formed are												
a salt, carbon dioxide and water. The												
type of salt formed will depend on												
carbonate used in that reaction												
• The general equation is always:												
acid + metal carbonate \longrightarrow salt +												
carbon dioxide + water. Example:												
 word equation: hydrochloric acid + calcium carbonate —> 												
calcium chloride + carbon												
dioxide + water												
 balanced chemical equation: 												
$2HCI + CaCO_3 \longrightarrow CaCI_2 + CO_2 + H_2O_2$												
Week 8 Lesson B	60											
Topic: Reactions of acids with bases:	69											
Content & Concents: The general												
reaction of an acid with a metal												
carbonate (base)												
Metal carbonates are bases												
When any acid reacts with a metal												
carbonate, the products formed are												
a sait, carbon dioxide and water. The												
the specific acid and metal												
carbonate used in that reaction												
The general equation is always:												
acid + metal carbonate \longrightarrow salt +												
carbon dioxide + water												
										1		

Week 8 Lesson C											
Topic: Reactions of acids with metals	69										
Content & Concepts: The general											
reaction of an acid with a metal											
When any acid reacts with a metal.											
the products formed are a salt and											
hydrogen gas. The type of salt											
formed will depend on the specific											
acid and metal used in that reaction											
 The general equation is always: 											
acid + metal \longrightarrow salt + hydrogen											
gas. Example:											
 Word equation: hydrochloric 											
acid + magnesium											
magnesium chioride +											
Relanced chemical equation:											
O Balanced chemical equation: 2HCl + Mg \longrightarrow MgCl 2 + H2											
	Reflectio	n									
Year:											
Think about and make a note of: What went well? W	hat did not	go	W	'hat w	ill you	ı char	nge ne	ext tim	e? W	hy?	
Well? What did the learners find difficult or easy to u	nderstand d	or ao? Il the									
work set for the week? If not, how will you get back	on track?	ii the									
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Think about and make a note of: What went well? W	hat did not	go go	W	'hat w	ill you	u char	nge ne	ext tim	e? W	hy?	
What will you do to support or extend learners? Did	nderstand d	ll the									
work set for the week? If not, how will you get back	on track?	ii the									
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Week 9																
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Week 9 Lesson A																
Topic: Revision	63-69															
Week 9 Losson B																
Topic: Revision	63-69															
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Week 9 Lesson C																
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well? What did the learners find difficult or easy to u What will you do to support or extend learners? Did work set for the week? If not, how will you get back	Think about and make a note of: What went well? What did not go well? What did the learners find difficult or easy to understand or do? What will you do to support or extend learners? Did you cover all the work set for the week? If not, how will you get back on track?							What will you change next time? Why?								
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Week 10												
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CAPS concepts and Activities	no	-										
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Examination												
	Reflectio	n										
Year:												
Think about and make a note of: What went well? well? What did the learners find difficult or easy to What will you do to support or extend learners? Di work set for the week? If not, how will you get bac	Wh	nat wi	ill you	ı chan	ige ne	ext tim	ne? W	hy?				
			НО	D:		Date:						
Year:												
Think about and make a note of: What went well? well? What did the learners find difficult or easy to What will you do to support or extend learners? Di work set for the week? If not, how will you get bac	What did not o understand o id you cover a k on track?	go or do? Il the	Wh	nat wi	ill you	ı chan	ge ne	ext tim	ne? W	hy?		
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